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# Understanding menstrual health and hygiene practices among college-going girls: Evidences from Nagaon, India

Nazneen Akhtar[1], Sanchita Bora[2], Manashi Bora[3], Anjana Begum[4], Namita Ojah[5], Nitesh Bothra[6], Kulen Chandra Das[7]

## ABSTRACT

Adolescence is a significant transitional stage for girls since it is during this stage that noticeable physical growth, psychological and behavioural changes are perceived in them. But it is unfortunate that in many places and in many societies this normal and natural process is considered as dirty, impure and shameful. Moreover, menstruation is associated with various myths, taboos and restrictions. These are undoubtedly unhealthy, and such dogmatic notions leave a negative impact on adolescent girls. Because of these taboos, girls often don't talk openly about periods and even hesitate to discuss issues related to menstruation with their parents, families and relatives. Consequently, they miss out on important health information. Also, due to inadequate water, sanitation, and hygiene facilities, menstruation becomes an unpleasant and irritable experience for them. Educating girls about periods and hygiene is crucial for their health. The present study, therefore, attempts to identify the misconceptions and understandings of adolescent girls and women regarding menstrual health and hygiene in the study area. It also examines the obstacles and difficulties they face in achieving sustainable menstrual wellness and hygiene. The findings highlight significant gaps in menstrual health knowledge and hygiene practices in the study area. A significant number of respondents perceive menstruation as 'dirty,' a belief rooted in pervasive menstrual myths across various Indian states. The state of Assam in India is no exception to this. Such perceptions contribute to the social and cultural exclusion of menstruating women, often subjecting them to restrictive practices and stigmatization. Even though the study is area-specific, the findings of the study have broader implications for improving menstrual health education as well as easy access to menstrual health products. Definitely, a study on menstrual health and hygiene among adolescent girls can serve as the basis for the formulation of policies that are responsive to the specific needs of young girls and women in the region.

**Keywords:** Menstruation, Health, Hygiene, Adolescence, Women

**Authour(s) Details:**

1. Assistant Professor, Nowgong Girls' College, Nagaon, Assam, **Email:** akhtar.nazneen365@gmail.com; Mob. 7086054783
2. Associate Professor, Nowgong Girls' College, Nagaon, Assam, **Email:** sanchita.bora1@gmail.com, Mob. 7002726875
3. Assistant Professor, Nowgong Girls' College, Nagaon, Assam, **Email:** manashingc23@gmail.com, Mob.9395670362
4. Assistant Professor, Nowgong Girls' College, Nagaon, Assam, **Email:** anjanangc257@gmail.com, Mob. 9707640255
5. Assistant Professor, Nowgong Girls' College, Nagaon, Assam, **Email:** namitaojah11@gmail.com, Mob. 9954338792
6. Assistant Professor, Nowgong Girls' College, Nagaon, Assam **Email:** niteshbothra7@gmail.com, Mob.7002215935
7. Principal, Nowgong Girls' College, Nagaon, Assam, **Email:** kulen1das@gmail.com, Mob. 8638026534

**Corresponding Address:** Nazneen Akhtar, Assistant Professor, Nowgong Girls' College, Nagaon, Assam, Pin- 782002, India, **Email:** akhtar.nazneen365@gmail.com; Mob. 7086054783

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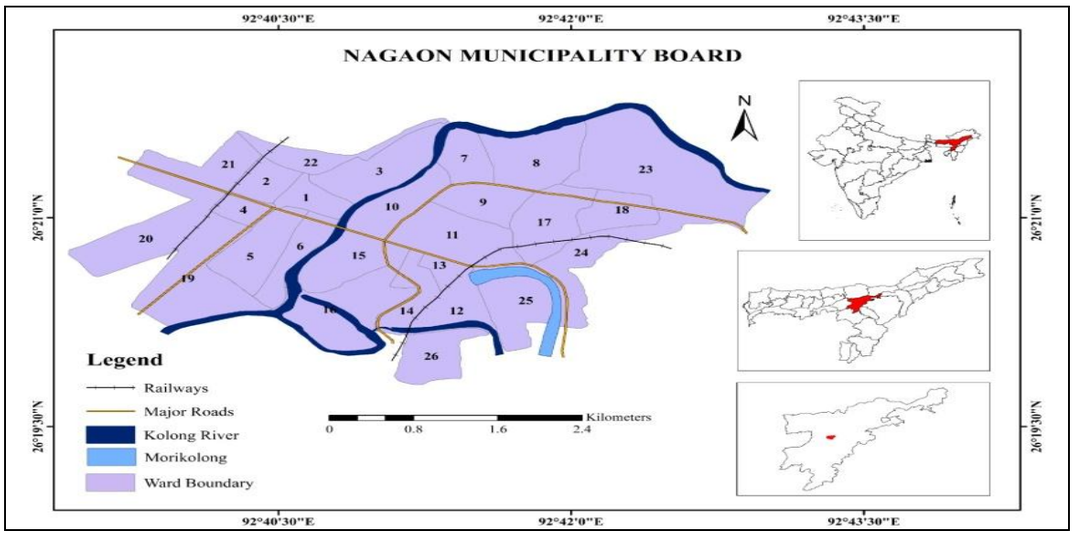
## Introduction

Menstruation is a normal physiological process of women of reproductive age that causes the uterine lining to shed monthly. The average length of a menstrual cycle is 28 days. It usually lasts three to seven days during each cycle. Menstrua1 bleeding is a mixture of blood and tissue that flows out from the inside of the uterus. Hormones regulate the entire process of menstruation. At the time of shedding, the most common symptom is pelvic spasm, which is generally caused by the contraction of the uterus. Women experience various other symptoms like mood swings, breast tenderness, bloating, sleep problems, acne etc. The intensity of these symptoms may also vary from individual to individual. Hormonal fluxes during the menstrual cycle involving progesterone and estrogen are a cause of such hitches [1, 2].

For girls, the adolescent period is very important because it is a transitional phase. Usually, menarche (the first period) happens to a girl between the ages 11 and 15. Noticeable physical growth, psychological and behavioural changes are perceived in this phase of life. But it is unfortunate that in many places and in many societies this normal and natural process is considered as dirty, impure and shameful. Moreover, menstruation is associated with various myths, taboos and restrictions. These are undoubtedly unhealthy and such dogmatic notions leave a negative impact on adolescent girls. Because of these taboos, girls often don't talk openly about periods and even hesitate to discuss issues related to menstruation with their parents, families and relatives. Consequently, they miss out on important health information. Also, due to inadequate water, sanitation, and hygiene facilities, menstruation becomes an unpleasant and irritable experience for them. So, educating girls about periods and hygiene is crucial for their health.

Understanding periods means knowing what menstruation is and how to maintain good health during this period. 'Menstrual hygiene' means taking care of yourself properly during period. In order to avoid infections and to promote well-being, proper menstrual hygiene has to be maintained. It requires the use of clean absorbents, regular changing, and safe disposal measures. The most unfortunate situation is that without having much knowledge about menstruation, the period begins in the majority of girls. The lack of adequate management of menstrual hygiene affects girls' social participation, school attendance, and also their dignity [3,4,5].

**Figure-1:** Location map of the study area




In the case of adolescent girls, the social stigma and cultural taboos regarding menstruation significantly affect their access to education and proper menstrual hygiene management. Moreover, a good number of studies have reported lack of menstrual hygiene as a cause of Urinary Tract Infections (UTI's) and Reproductive Tract Infections (RTI's) among women at a later stage [6,7]. The menstrual hygiene-related infection is believed to be endogenous, which may also enter the reproductive system through the absorbing materials often used during menstruation. Inadequate personal cleanliness during the menstrual cycle is definitely a cause of reproductive tract infection [4].

Therefore, educating adolescent girls about good hygiene habits during menstruation may significantly lower the number of maternal and neonatal deaths. To address these issues and to protect the health and dignity of women and girls around the world, it is necessary to raise awareness. Access to sanitary products must be provided, supportive environments should be created, and harmful myths should be dispelled.

According to reports, the maternal and child death rate in the North-eastern Indian state of Assam is greater than the national average. Therefore, it is important to investigate the probable causes of these rates and adopt interventions at all stages of vulnerability. This could help reduce them. Menstrual health awareness varies significantly across regions and socio-economic groups. Increased risks of reproductive tract infections (RTIs), urinary tract infections (UTIs), and school absenteeism are all linked with poor menstrual hygiene[8]. Such findings speak about the urgent need for improved menstrual hygiene management (MHM) strategies along with more potent infrastructure and awareness initiatives.

The results of larger state-level or national surveys are very often generalized. But it would not accurately depict the socio-cultural and economic realities of the population of Nagaon. Recognizing this research gap, our study seeks to build upon the existing research, investigating the factors associated with the exclusive use of period products among girls and women in the Nagaon Municipality area (between the ages of 16 and 30). Hence, targeting this group is of utmost necessity and the need of the hour in order to promote sustainable menstrual health and hygiene practices, as well as to mitigate related issues and challenges. Therefore, the intention of our study is to figure out the misconceptions and understandings of adolescent girls and women regarding menstrual health and hygiene in this particular study area. It also examines the obstacles and difficulties they face in achieving sustainable menstrual wellness and hygiene.

Thus, this study was undertaken with the aforesaid objectives for a thorough understanding of menstrual health in the Nagaon region. Furthermore, this survey seeks to explore the possible need for a health education intervention, which will definitely support fostering healthier lifestyles for young women in the area. Even though the study is area-specific, the findings of the study have broader implications for improving menstrual health education as well as easy access to menstrual health products. Definitely, a study on menstrual health and hygiene among adolescent girls can serve as the basis for the formulation of policies that are responsive to the specific needs of young girls. Surveys and studies of this type will undoubtedly foster such environments that support their physical, emotional, and educational well-being.

**Ethical statements:** The research does not include any experiments with animals or humans.

## Materials and Methods

***Area of study and sampling strategy*:** The Central Assam District of Nagaon (spelt by the British as Nowgong) extends from $25^0\ 4^/$ to $26^045^/$ North Latitude and $92^03^/$ to $93^0\ 3^/$ East Longitude and is one of the largest districts of Assam. The district sprawls across almost four thousand square kilometers, covering fertile alluvial plains and thickly forested hills. On the northern boundary of Nagaon lies Sonitpur district and the river Brahmaputra. West Karbi Anglong and North Cachar Hills border it in the south, and towards the eastern boundary lies East Karbi Anglong and Golaghat district. Flowing along the northern edge of the district is the majestic river Brahmaputra. The Kopili and the Kolong are the other major tributaries meandering through Nagaon and drain into the Brahmaputra [9]. The entire district covers an area of 3831 sq. km. Nagaon is well connected to the rest of Assam by National Highways- NH36 and NH37, 37A and the state. The town is a vital corridor linking the Upper Assam districts of Golaghat, Jorhat, Sivasagar, Dibrugarh, Tinsukia and the North Assam districts of Sonitpur and North Lakhimpur. It lies at an average distance of 120 kms from Guwahati city.

For this study, we have purposefully selected a sample of 900 college-going girls from Nagaon Municipality Area, aged between 16 and 30 years, who comprised both the adolescent and early adulthood period, who were interviewed during a span of 4 months from January to April, 2024.

***Database and methodology*:** The present research work adopts a mixed-methods approach, incorporating both quantitative and qualitative research methods. It comprised data sourced from both primary and secondary channels. Primary data was gathered through a semi-structured questionnaire that collected information regarding the socio-demographic attributes and menstrual practices of the chosen sample. The main variables included age at menarche, caste, religion, occupation, educational qualification of the respondent and the parents, monthly income of the family, knowledge about menstruation,

sources of information, length of bleeding and practices about use of products, disposal of used products, myths and social stigma, and challenges experienced during menstruation concerning product accessibility and waste disposal methods.

Data obtained through the help of the questionnaire were analysed using SPSS software version 22, and results were interpreted using suitable statistical techniques. Descriptive statistics was used to calculate the proportion, mean and standard deviation, and the chi-square test was used to measure the association between categorical variables.

## Results and Discussion

***Socio-Demographic profile of the respondents*:** The socio-economic and demographic profile of the respondents depicts that 99.5 per cent of them belonged to the age group 16-25 years, while only 0.5% were in the 26-30 age group (**Fig. 2**). Most of the participants were Hindus (71.7%), followed by Muslims (26.1%), Christians (2.1%) and Sikhs (0.1%). Around 61.2% belonged to a nuclear family, while 38.8% lived in a joint family. In terms of education, 5.3% of girls were studying in Senior Secondary Schools (+2), 92.2% in graduation and 2.4% at the postgraduate level in various colleges in Nagaon. Around 7.8% of the respondents' mothers were illiterate, 7.3 % had studied till intermediate, 32.2% had received their formal education till primary, 32.1% till secondary and 20.6% till senior secondary level. Around 4.4% of the respondents' fathers were illiterate, 9.4% had studied till intermediate, 30.6% had received their formal education till primary, 28.9% till secondary and 26.7% till senior secondary level. Again, in terms of the annual income levels of the family (**Fig.3**), 85.5% of the respondents were found to belong to the income bracket of below 2 lakhs, 11.3% between 2-5 lakhs and only 4.2% above Rs. 5 lakhs annually.

**Figure-2:** Frequency distribution showing the age of respondents

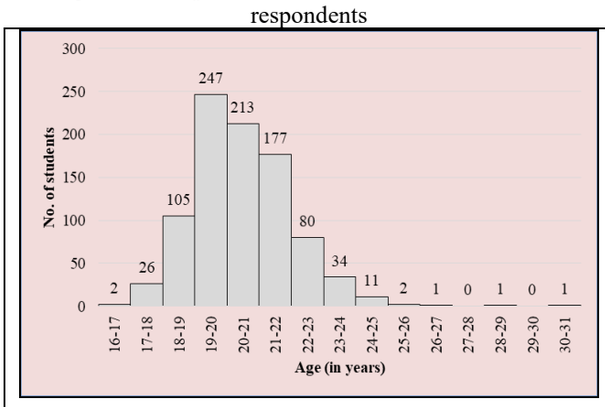
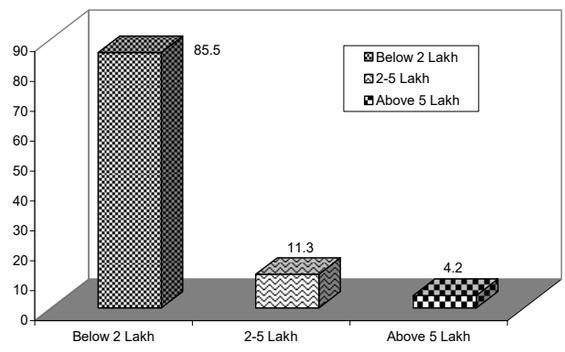



**Figure-3:** Frequency distribution showing annual family income of the respondents




***Menstrual Health and Hygiene Practices*:** The study finds, as shown in **Fig. 4**, the minimum age at menarche to be 10-11 years. Almost 25.0% of the sample disclosed having attained menarche between 12-13 years of age. 65.1% of students had prior knowledge of menstruation before experiencing their first period. However, 34.9% were unaware of it beforehand. 55.0% correctly identify the uterus as the source of menstrual blood. 45.0% did not know where menstrual blood comes from. 39.6% recognized it as a physiological process, 28.8% believe it is "God-given," and surprisingly, 31.7% of the respondents lacked any knowledge, though all of them are college-going students.

While analysing the menstrual flow characteristics, the study confirms having regular periods for 82.8% of the respondents, though 17.2% report irregular cycles. 69.2% experience moderate flow, 18.0% have light flow, and 12.8% report heavy flow. It further confirms that 48.9% of students report bleeding for 1-5 days, while 3.7% has prolonged

bleeding of more than 10 days. Menstrual discomfort is varied and common for many as presented in **Fig. 5.** The figure shows 40.2% of the respondents to have experienced back pain, and 32.2% complain about abdominal pain. Mood swings are common, as the study finds, for 22.8% of the sample population. A few of the respondents, i.e., 4.8.0%, also report having suffered from leg ache.

**Figure- 4:** Frequency distribution of the age at menarche of the respondents

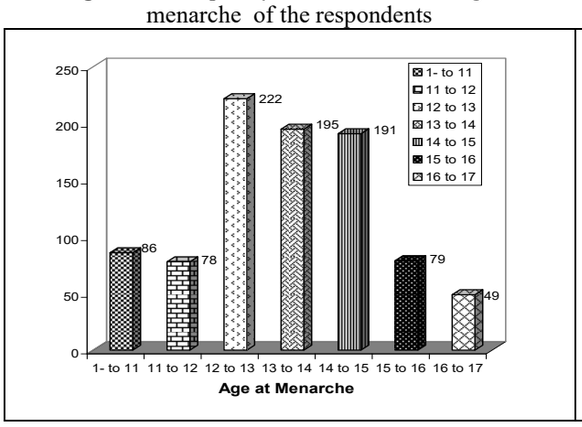
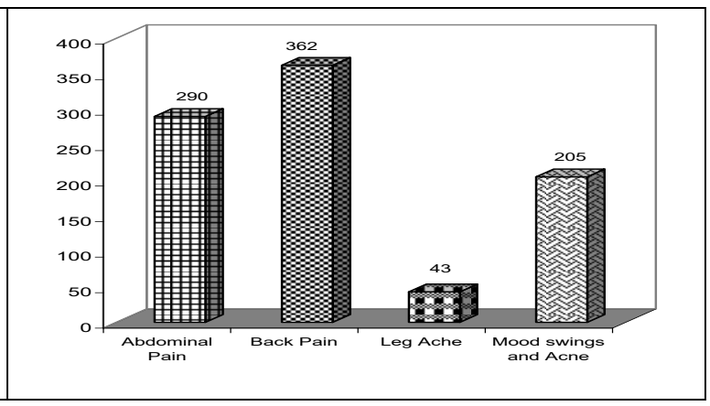



**Figure-5:** Problems faced during menstruation




The respondents revealed, during the survey, to have used various types of menstrual products, as shown in **Fig. 6**. Sanitary napkins are the most used product among all other options, which is used by 709 (78.8%) of the respondents. 122 (13.6%) prefer period pants, 48 (5.3%) use cloth, and only 12 (1.3%) use menstrual cups, 9 (1.0%) of students use tampons.

**Figure- 6:** Types of products used during periods

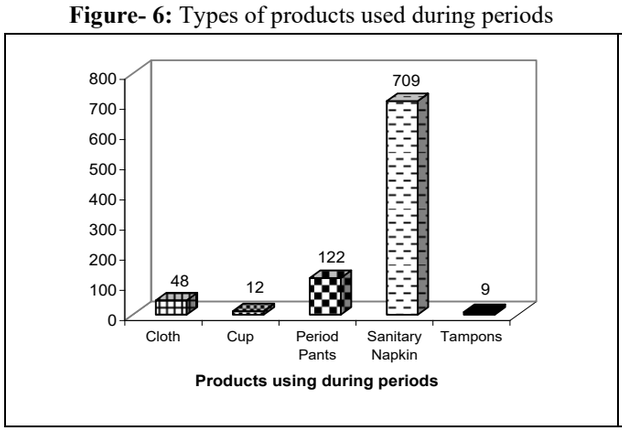
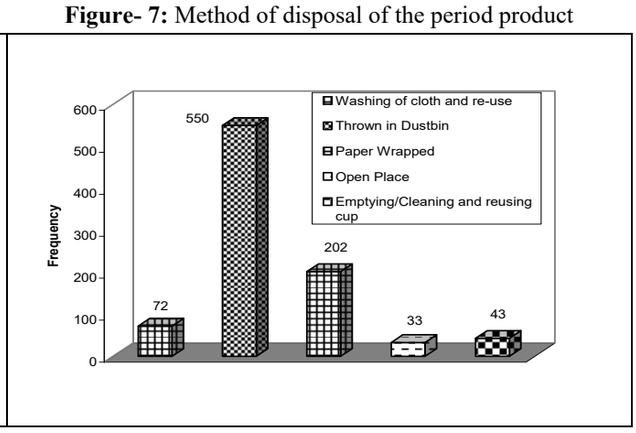



**Figure- 7:** Method of disposal of the period product




When hygiene practices of the respondents were analysed, it was found that 17.6% frequently reuse cloth, 76.6% change pads frequently, 61.1% dispose of sanitary products in dustbins. The 22.4% wrap the products in paper before disposal. 8percent wash and reuse cloth, 3.7% dispose of products in open areas, 4.8% clean and reuse menstrual cups, 91.8% wash their hands with soap and water after changing menstrual products, and 8.2% use only water, indicating a gap in proper hygiene practices

***Menstrual Restrictions and Cultural Practices*:** It is quite common in our society to regard women as impure, dirty, or sinful while they're menstruating. Women need to observe many restrictions during the period. However, such restrictions vary across religions and various communities. The study finds that 47.7% do not visit religious places during menstruation,

which is found to be common for most religions in the study area. 29.1% of the respondents follow separate seating and sleeping arrangements. 6.9% avoid cooking during their periods. Only 16.3% face no restrictions at all.

Moreover, in assessing the need for a menstrual health awareness programme, 82.9% of the respondents believe that there is a need for such a programme in their respective schools and colleges. These findings suggest the urgent need for improved menstrual hygiene management (MHM) strategies, including better infrastructure and awareness programs at the grassroots level.

Apart from the above, the study also administered chi-square tests to examine dependencies between different factors. We postulated two hypotheses in this case:

**Table-1: $H_0$:** Products used during periods and problems faced during the time of periods are independent.

| Product used during periods / Problems faced during the time of periods | Abdominal pain | Back pain | Leg ache | Mood swings and acne |
|---|---|---|---|---|
| Cloth | 21 | 19 | 1 | 7 |
| Cup | 2 | 3 | 2 | 5 |
| Period pants | 26 | 65 | 14 | 17 |
| Sanitary napkin | 239 | 269 | 26 | 175 |
| Tampons | 2 | 6 | 0 | 1 |
| $\chi2$ (Observed value) = 43.648; $\chi2$ (Critical value)= 21.026; df = 12; p<0.0001; Alpha= 0.05 | | | | |

It reveals that as the computed p-value is lower than the significance level alpha=0.05, which is against the null hypothesis, and thus it can be concluded that products used during periods have some impact on the problems faced. It may be inferred that the type of menstrual product used significantly impacts menstrual discomfort. Students using cloth reported higher rates of abdominal pain than those using sanitary napkins.

**Table-2: $H_0$-** Religion and Restrictions practiced during menstruation are independent.

| Religion / Restrictions practiced during menstruation | No restriction | Not cooking | Not visiting religious place | Sitting & sleeping separately |
|---|---|---|---|---|
| Christian | 13 | 0 | 2 | 4 |
| Hindu | 72 | 44 | 311 | 218 |
| Muslim | 61 | 18 | 116 | 40 |
| Sikh | 1 | 0 | 0 | 0 |
| $\chi2$ (Observed value) = 84.855; $\chi2$ (Critical value)= 16.919; df = 9; p**<0.0001**; Alpha= 0.05 | | | | |

As the computed p-value is lower than the significance level alpha=0.05, there is no evidence to accept our null hypothesis and hence we reject the null hypothesis $H_0$, and infer that there exists some relationship between religion and restrictions practiced during menstruation. In the study area, it was found that Hindu and Muslim students faced more restrictions, such as avoiding religious places. Christian students reported the least restrictions.

## Conclusion and Recommendations

This study seeks to explore the knowledge and attitude surrounding menstrual health and hygiene among adolescent girls and women in the study area. It also examines the challenges they face in achieving sustainable menstrual health management. By addressing these issues, the study aims to provide a comprehensive understanding of local menstrual health practices and assess the need for targeted health education interventions to promote positive health outcomes. Findings reveal that a significant number

of respondents perceive menstruation as 'dirty,' a belief rooted in pervasive menstrual myths across various Indian states. The state of Assam is no exception to this. Such perceptions contribute to the social and cultural exclusion of menstruating women, often subjecting them to restrictive practices and stigmatization.

The findings highlight significant gaps in menstrual health knowledge and hygiene practices in the study area. The study underscores the need for: (i) a comprehensive menstrual health education that shall address myths and misconceptions related to periods and promote awareness about menstrual physiology, (ii) need for improved sanitary facilities in schools and homes by ensuring availability of separate toilets and providing better disposal facilities for menstrual waste., (iii) encouraging the use of hygienic menstrual products and promoting affordable and sustainable products like menstrual cups, (iv) breaking socio-cultural taboos associated with periods by addressing restrictions that negatively impact menstrual well-being and effectively engaging parents in menstrual health education to reduce stigma. The study highlights a strong need for menstrual health awareness, better hygiene facilities, and the eradication of cultural taboos**.** Tackling these concerns would greatly improve the menstrual health and general well-being of students in the area.

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